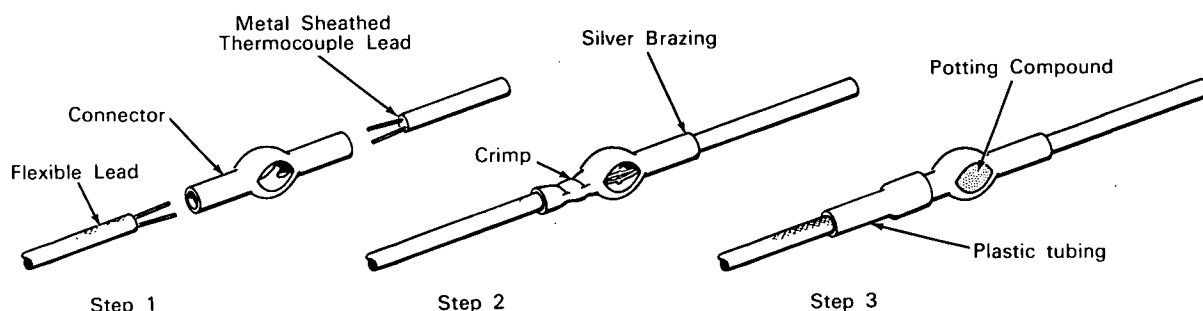


NASA TECH BRIEF



This NASA Tech Brief is issued by the Technology Utilization Division to acquaint industry with the technical content of an innovation derived from the NASA space program.

Connector for Thermocouple Leads Saves Costly Wire, Makes Reliable Connectors



The problem: To design a simple, reliable, lightweight electrical connector for use in thermocouple circuits.

The solution: A small, lightweight connector and a technique for joining thermocouple lead wires to assure good electrical contact, strong and vibration-resistant mechanical joints, and sealing against moisture and chemical corrosion. The connector has a central opening for joining the wires and adding potting material.

How it's done: The metal-sheathed thermocouple lead and flexible lead are inserted into the end openings of the connector. One end of the connector is then silver-brazed to the metal thermocouple sheath, and the other end of the connector is crimped over the insulation of the flexible lead. As a further protection against abrasion and breakage, a small length of heat-shrinkable plastic tubing is secured over one end of the connector and a portion of the flexible lead. The wires are joined and silver-brazed through the central opening of the connector after any excess wire has been clipped off. Then a suitable moisture-proof,

electrically insulating potting compound is worked into the central opening to encapsulate the wire junctions.

Notes:

A particular advantage of this development is that, where temperature conditions permit, only a limited amount of expensive metal-sheathed thermocouple wire need be used. Less costly flexible wire is used from the connectors to the recording instruments.

This method should be useful for making electrical connections that will be subjected to severe mechanical and chemical conditions. It has the further advantage that the work can be readily inspected at all stages.

Patent status: NASA encourages the immediate commercial use of this invention. Inquiries about obtaining rights for its commercial use may be made to NASA Headquarters, Washington, D.C. 20546.

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